

INTERNATIONAL SEARCH REPORT

International application No.
PCT/AU2004/001493

A. CLASSIFICATION OF SUBJECT MATTER Int. Cl. ⁷ : C12N 5/08 According to International Patent Classification (IPC) or to both national classification and IPC												
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) wpids, medline, caplus, biosis: CD4, CMRF-35, CD45RO, CD45, CMRF												
C. DOCUMENTS CONSIDERED TO BE RELEVANT												
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.										
A	SALMON, M. et al (1989) "Production of lymphokine mRNA by CD45R+ and CD45R- helper T cells from human peripheral blood and by human CD4+ T cell clones" <i>J Immunol.</i> 143(3), 907-12 Abstract Only											
A	DAISH, A. et al (1993) "Expression of the CMRF-35 antigen, a new member of the immunoglobulin gene superfamily, is differentially regulated on leucocytes" <i>Immunology</i> , 79(1), 55-63 Abstract Only											
A	DAISH, A. et al (1994) "Characterization of a novel leucocyte activation antigen recognize by the antibody CMRF-37" <i>Immunological Cell Biology</i> , 72(1), 13-21 Abstract Only											
<input type="checkbox"/> Further documents are listed in the continuation of Box C <input type="checkbox"/> See patent family annex												
* Special categories of cited documents: <table border="0"> <tr> <td>"A" document defining the general state of the art which is not considered to be of particular relevance</td> <td>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</td> </tr> <tr> <td>"E" earlier application or patent but published on or after the international filing date</td> <td>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</td> </tr> <tr> <td>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</td> <td>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</td> </tr> <tr> <td>"O" document referring to an oral disclosure, use, exhibition or other means</td> <td>"&" document member of the same patent family</td> </tr> <tr> <td>"P" document published prior to the international filing date but later than the priority date claimed</td> <td></td> </tr> </table>			"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention	"E" earlier application or patent but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone	"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art	"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family	"P" document published prior to the international filing date but later than the priority date claimed	
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"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art											
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family											
"P" document published prior to the international filing date but later than the priority date claimed												
Date of the actual completion of the international search 15 November 2004		Date of mailing of the international search report 26 NOV 2004										
Name and mailing address of the ISA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustalia.gov.au Facsimile No. (02) 6285 3929		Authorized officer PHILIPPA WYRDEMAN Telephone No : (02) 6283 2554										

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Box No. II Observations where certain claims were found unsearchable (Continuation of Item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claims Nos.: 1-37 all in part
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
See extra sheet
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

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Supplemental Box

(To be used when the space in any of Boxes I to VIII is not sufficient)

Continuation of Box No: II

Claims 1-37 are not fully supported by this application. Claims 1-37 are directed to isolated populations of CD4+ cells with CMRF-35 and CD45RO surface molecule status. Said status may be negative for either or both of these surface molecules. The description provides that the invention is based upon the determination that the CMRF-35 mAb defines a sub-population of T-cells and identifies five sub-populations defined thereby (see pages 3 and 4). These claims are directed to these sub-populations but without the feature that they be defined via the use of the CMRF-35 mAb. The scope of these claims is thus such that they could include any CD4+ cells with neither or only one of these molecular markers that do not form part of the sub-population as defined by CMRF-35 mAb. The description fails to provide support for such CD4+ cells. It is only possible to search these cells in so far as CMRF-35 and CD45RO have both been identified. It is entirely probable that populations of CD4+ cells exist that are either +ve or -ve to either or both of CMRF-35 and CD45RO but which have not been identified as such. Thus, it is not possible to undertake a comprehensive search of the prior art that will cover the entire scope of any of these claims. Moreover, claims 1, 6, 7, 8, 18, 19, 20, 21, 26, 27, 28, and dependencies are directed to cells -ve for either of CMRF-35 and CD45RO. Again, a comprehensive search of these claims is not possible since many CD4+ cells exist that will be -ve for either or both of CMRF-35 and CD45RO without having been identified as such. This is particularly the case for cells claimed as -ve to both CMRF-35 and CD45RO.

These claims have thus only been searched to the extent that the prior art identifies both CMRF-35 and CD45RO surface markers on CD4+ cells.